

WE CLAIM:

1. A system for prioritizing communication in a shared bandwidth communication network comprising:

an interface to the shared bandwidth communication
5 network operable to transport data for a plurality of users;

a front-end server coupled to the interface to select the rate and order at which data is supplied through the interface to the shared bandwidth
10 communication network.

2. The system of claim 1 wherein the front-end server supplies the data to the interface at a rate and order that determines a relative priority of the data.

3. The system of claim 1 wherein the interface is a router and the front-end server couples to the router, wherein the front-end server communicates control information to the router to manipulate the rate and
5 order of data flow through the router.

4. The system of claim 1 wherein the interface supports TCP channels.

5. The system of claim 4 wherein the front-end server selectively applies data to the TCP channels at a rate and order that effectively prioritizes some channels over other channels.

6. The system of claim 4 wherein the front-end server manipulates TCP parameters including window size, window expansion rate, and window contraction rate to effectively prioritize some channels over other channels.

7. The system of claim 1 wherein the shared bandwidth communication system comprises a gateway to a wireless network.

8. The system of claim 1 wherein the shared bandwidth communication system comprises a cable modem system.

9. The system of claim 1 wherein the shared bandwidth communication system comprises a network having a shared access point, wherein the access point creates a bandwidth restriction that is shared by all users of the
5 access point.

10. The system of claim 1 wherein the shared bandwidth communication system comprises an Internet Service Provider.

11. A method for prioritizing communication in a shared bandwidth communication system comprising:

receiving a plurality of data transmission from a second communication system, each data transmission
5 corresponding to a particular client;

queuing data in a plurality of sockets; and
communicating the data transmissions in a prioritized fashion to the shared bandwidth communication system.

12. The method of claim 11 further comprising associating each socket with a unique priority level.

13. The method of claim 11 each created socket corresponds to a separate one of the plurality of data transmissions.

14. The method of claim 13 wherein each socket is associated with a priority value.

15. The method of claim 11 wherein the step of communicating in a prioritized fashion comprises regulating the rate at which responses are communicated on a socket-by-socket basis.

16. The method of claim 11 wherein the step of communicating in a prioritized fashion comprises reordering responses.

17. The method of claim 11 further comprising associating a priority value with each socket.

18. The method of claim 17 further comprising identifying information in each response that indicates a current priority value and using the current priority value as the priority value that is assigned to each socket.

19. The method of claim 11 wherein the act of creating a socket comprises creating a TCP socket for each request.

20. The method of claim 19 wherein the act of communicating in a prioritized fashion comprises selectively applying data to the TCP socket at a rate and order that effectively prioritizes some sockets over other sockets.

21. The method of claim 19 wherein the act of communicating in a prioritized fashion comprises manipulating TCP parameters including window size, window expansion rate, and window contraction rate to effectively prioritize some sockets over other sockets.

22. The method of claim 11 wherein the shared bandwidth communication system comprises a wireless network.

23. The method of claim 11 wherein the shared bandwidth communication system comprises a gateway to a wireless network.

24. The method of claim 11 wherein the shared bandwidth communication system comprises a cable modem system.

25. A front-end server for controlling prioritization in an external shared bandwidth communication network comprising:

an first interface to the shared bandwidth communication network;

a second interface to a data network;

data buffers operable to hold data for each of a plurality of clients; and

means to selectively apply data from the buffers to the interface so as to communicate the data to the shared bandwidth communication network in a manner that prioritizes some data in the buffer over other data in the buffer.

26. The server of claim 25 wherein the means to selectively apply regulates the rate at which data is applied from the data buffers to the first interface.

27. The server of claim 25 wherein the means to selectively couple modifies the order in which data is applied from the data buffers to the first interface.

28. The server of claim 25 wherein the means to selectively apply modifies the rate/order at which data is coupled from the data buffers to the interface so as to throttle bandwidth allocated to a first set of the data so as to explicitly gain more than a fair share of available bandwidth for a second set of the data.

29. The server of claim 25 wherein the second interface includes mechanisms for communicating prioritization information associated with data communicated with the data network.

30. A front-end server for controlling prioritization in an shared bandwidth communication network having an available bandwidth for a first and a second set of data transmissions, the server comprising:

5 one or more interfaces to the shared bandwidth communication network; and

means to gain more than a fair share of the available bandwidth for the first set of data transmissions out of the available bandwidth for the first and the second sets of data transmissions.

31. The server of claim 30 wherein the shared bandwidth communication network includes mechanisms operative to provide a fair allocation bandwidth between the first set of data transmissions and the second set of data transmissions.